

# FY 2008 Annual Guidance Memorandum

## Hydrology Program

(24 September 2007)

This Annual Guidance Memorandum provides direction for the Core Goal Teams as they formulate recommendations for projects to be funded by the Hydrology Program during FY 2008. The NOAA Hydrology Program Manager's priorities for each of the high priority core goals, as determined by the AHPS Review Committee (ARC), are listed. Of course, Team recommendations are not restricted to projects that directly support these objectives. Core Goal Teams should feel free to propose and justify the funding necessary to continue or initiate other critical activities.

In addition, the following core goals and associated program area will continue to be funded: New Service Locations; Outreach; Training; Web Page Deployment; and Program Management. FY 2008 work plans in these areas will be developed by program area focal points and reviewed by the ARC.

### **Highest priority core goals and associated teams are:**

- **Innovation Team**
  - Core Goal: Improve hydrologic forecasts impacted by reservoirs and regulation
    - Develop implementable approach to provide uncertainty information for hydrologic forecasts impacted by reservoirs and regulations
- **Experimental Ensemble Forecast System Team**
  - Core Goal: Quantify the uncertainty of our forecast information
    - Develop a plan for implementing an Experimental Ensemble Forecast System (XEFS) at selected RFCs
    - Develop a plan to transition advanced hydrologic ensemble prediction techniques to operations
    - Test advanced hydrologic ensemble prediction techniques
- **Distributed Model Operations Concept Team**
  - Core Goal: Provide, then improve, gridded water resource data production capability
    - Develop an operations concept and associated requirements for a national multi-tiered distributed hydrologic modeling infrastructure which effectively links the NOHRSC, RFC, and WFO operations to provide enhanced water resource services.
    - Develop a distributed hydrologic model gap analysis and implementation strategy based on the approved operations concept.
    - Test distributed hydrologic modeling (both conceptual and physically-based) and automated data assimilation over mountainous terrain
- **Community Hydrologic Prediction System Acceleration Team**
  - Core Goal: Software refresh – enhance the usability and/or internal workings of existing software
    - Complete formal test and assessment of Community Hydrologic Prediction System (CHPS)/Flood Early Warning System.

- Define the requirements for a fully operational CHPS at selected RFCs
- **Hydrologic River Forecast Center Verification Requirements Team**
  - **Core Goal: Verify our forecast and uncertainty information**
    - Continue implementation of River Forecast Verification Plan.
- **Flood Inundation Mapping Team**
  - **Core Goal: Improve flood forecast inundation maps - Static Maps**
    - Implement, via the AHPS web portal, flood inundation mapping libraries in the Gulf Coast Region.
    - Develop a Flood Inundation Map document of guidelines and recommended methods to produce Flood Inundation Map Libraries which are consistent with FEMA National Flood Insurance Program flood maps.

**High priority core goals and associated teams are:**

- **Inputs and Forcings for Hydrologic Models Team**
  - Core Goal: Improve the quality of physical inputs and forcings (e.g. QPE, QPF, temperature, snow, evapotranspiration, soil conditions, burn data, etc.)
    - Deliver the precipitation estimation algorithms for dual polarized radars
    - Evaluate the potential use of super resolution radar
    - Deliver multisensor precipitation estimates at appropriate spatial and time resolution to support flash flood warnings
- **Integrated Water Resource Services (IWRS) Team**
  - Core Goal: Define and coordinate Hydrology Program requirements with other NOAA programs (conduct external projects)
    - Deliver soil moisture forecasts for Arizona to support the NOAA West IWRS Demonstration
    - Support Hydrometeorological Testbed (HMT) - West activities
- **RFC Archive Database and Maintenance Team**
  - Core Goal: Archive information required to support the Hydrology Program now and in the future
    - Document comprehensive RFC archiving requirements for both deterministic and probabilistic forecasting
- **Hydraulic Model Evaluation Team**
  - Core Goal: Improve the routing techniques used to connect forecast locations (includes coastal effects)- Hydraulic models
    - Begin work on incorporation of HEC-RAS into the suite of available RFC hydraulic models.
    - Develop plans, tools, and training for introduction of HEC-RAS into field operations.
- **Flash Flood Theme Team**
  - Core Goal: Deliver improved flash flood and debris flow monitoring tools (site specific, FFMP, statistical distributed modeling, dam break, for example)
    - Deliver to AWIPS, the Site-Specific Hydrologic Predictor model enhanced with automated data assimilation.